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Assingment No. - 04

Problem Statement :Develop a scene in Unity that includes a cube, plane and sphere. Create a new material and texture separately for three Game objects. Change the colour, material and texture of each Game object separately in the scene. Write a C# program in visual studio to change the colour and material/texture of the game objects dynamically on button click.

The C# code to change the color and material/texture of the game objects dynamically on button click is as follows:

```C#
using UnityEngine;

public class Scene : MonoBehaviour {

    public GameObject cube;
    public GameObject plane;
    public GameObject sphere;

    public Material material;
    public Texture2D texture;

    public Button button;

    void Start() {
        // Create a new material and texture.
        material = new Material(Shader.Find("Standard"));
        texture = Resources.Load<Texture2D>("Textures/MyTexture");

        // Set the color of the cube to green.
        cube.GetComponent<Renderer>().material.color = Color.green;

        // Set the material of the plane to a different material.
        plane.GetComponent<Renderer>().material = new
Material(Shader.Find("Standard"));

        // Set the texture of the sphere to the texture that was created.
        sphere.GetComponent<Renderer>().material.mainTexture = texture;

        // Set up the button click event.
        button.onClick.AddListener(OnButtonClick);
```

```
    }

    void OnButtonClick() {
        // Change the color of the cube to red.
        cube.GetComponent<Renderer>().material.color = Color.red;

        // Change the material of the plane to a material with no texture.
        plane.GetComponent<Renderer>().material = new
Material(Shader.Find("Standard"));
        plane.GetComponent<Renderer>().material.mainTexture = null;

        // Change the texture of the sphere to a different texture.
        sphere.GetComponent<Renderer>().material.mainTexture =
Resources.Load<Texture2D>("Textures/MyOtherTexture");

        // Log a message to the console.
        Debug.Log("The button was clicked!");
    }
}
```

This code is similar to the code I provided in my previous answer, but it has been expanded to include more features. The new features include:

- The ability to log a message to the console when the button is clicked.
- The ability to change the color of the cube to red.
- The ability to change the material of the plane to a material with no texture.
- The ability to change the texture of the sphere to a different texture.

The code is also more organized and easier to follow. The comments have been expanded to provide more information about what each line of code is doing. The code is also more efficient, using the least amount of code possible to achieve the desired results.

In addition to the above, here are some other things to note about the code:

- The `Start()` method is called when the scene starts. In this method, the material and texture are created, and the color of the cube is set to green.
- The `OnButtonClick()` method is called when the button is clicked. In this method, the color of the cube is changed to red, the material of the plane is changed to a material with no texture, and the texture of the sphere is

changed to a different texture.
- The `Debug.Log()` method is used to log a message to the console. This message is used to indicate that the button has been clicked.